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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,335	09/17/2003	Derek Savidge	M02B153-1	4124

7590

12/29/2005

Ira Lee Zebrak
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EXAMINER

KRISHNAMURTHY, RAMESH

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,335

Applicant(s)

SAVIDGE ET AL.

Examiner

Ramesh Krishnamurthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 - 36 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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This office action is responsive to amendment filed 10/13/2005.

Claims 1 – 36 are pending.

The applicant is reminded to update the status of parent application(s) referred to on page 1 of the specification.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 26 – 30 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation “ball is metal” and Claim 33 recited the limitation “ball is PTFE”. These claims are unclear in that in each claim ball is identified with the material. In this office action claims 26 and 33 are taken to imply that the ball comprises the respective materials recited.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 – 2, 5 – 11, 21, 24, 25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al. (US 5,370,507) in view of King et al. (US 5,542,450).

Dunn et al. discloses (See Fig. 1, for example) a chemical pump (here taken to include all known forms of chemical pumps including a vacuum pump) comprising a non-return valve (26) in a flow path for the fluids exhausted from the pump, the valve comprising a valve seat insert in the form of an O-ring (34) and a ball (29), and is positioned relative to said flow path such that when, in use, said ball is seated on the valve seat insert, the flow the fluids in said flow path is prevented and when there is predetermined fluid pressure in said flow path upstream of the ball, the ball is moved from the valve seat insert by fluid pressure, so that the fluid can flow in the flow path downstream of the ball.

The patent to Dunn et al. discloses the claimed invention with the exception of explicitly disclosing the O-ring to be comprising an elastomeric material having an increased resistance to a fluorine containing gas as compared to resistance provided by fluoroelastomers.

King et al. discloses use of O-rings in check valves, with the O-rings comprising perfluoroelastomers for the purpose of obtaining better sealing. It is noted that the property of providing increased resistance to a fluorine containing gas as compared to

resistance provided by fluoroelastomers is inherent to perfluoroelastomers. It would have been obvious to one of ordinary skill at the time the invention was made to have provided in Dunn et al., O-rings comprising perfluoroelastomers for the purpose of obtaining better sealing, as recognized by King et al.

As for claims 7 and 22, it is noted that Dunn et al. discloses the body to be made of a fluoroplastic material which here is taken to include all known forms of making plastic parts including well known molding i.e. casting. Additionally, it is noted that the limitations pertaining to casting in claims 7 and 22 render these claims to be regarded as product by process claims in which only the structure claimed is limiting and not any process steps implied therein.

It is noted that the device according to the combination of Dunn et al. and King et al. necessarily performs the method recited in claim 11 in its usual and normal operation.

6. Claims 1 – 2 and 5 – 10, 12, 13, 15, 16, 18, 20 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neward (US 5,478,216) in view of King et al. (US 5,542,450).

Neward discloses a vacuum pump comprising a non-return valve (60) in a flow path for the fluids exhausted from the pump, the valve comprising a valve seat insert in the form of an O-ring (45) and a ball (44), and positioned relative to said flow path such that when, in use, said ball is seated on the valve seat insert, the flow the fluids in said flow path is prevented and when there is predetermined fluid pressure in said flow path

upstream of the ball, the ball is moved from the valve seat insert by fluid pressure, so that the fluid can flow in the flow path downstream of the ball.

The patent to Neward discloses the claimed invention with the exception of explicitly disclosing the O-ring to be comprising an elastomeric material having an increased resistance to a fluorine containing gas as compared to resistance provided by fluoroelastomers.

King et al. discloses use of O-rings in check valves, with the O-rings comprising perfluoroelastomers for the purpose of obtaining better sealing. It is noted that the property of providing increased resistance to a fluorine containing gas as compared to resistance provided by fluoroelastomers is inherent to perfluoroelastomers. It would have been obvious to one of ordinary skill at the time the invention was made to have provided in Neward, O-rings comprising perfluoroelastomers for the purpose of obtaining better sealing, as recognized by King et al.

As for claim 7, it is noted that Neward discloses the body to be made of a plastic material (See Fig. 4) which here is taken to include all known forms of making plastic parts including well known molding i.e. casting. Additionally, it is noted that the limitations pertaining to casting in claim 7 render these claims to be regarded as product by process claims in which only the structure claimed is limiting and not any process steps implied therein.

7. Claims 3, 4, 12, 13, 15, 16, 18, 20, 26 – 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Dunn et al. and King et al.

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as applied to claims 1 – 2, 5 – 11, 21, 24, 25 and 35 above, and further in view of Ray (US 2002/0047025 A1).

The combination of Dunn et al. and King et al. discloses the claimed invention with the exception of explicitly disclosing the ball to be made of a ceramic material or coated with a non-stick material.

The disclosure of Ray teaches that it is known in the art to have ball comprising of a hard spherical core, for the purpose of providing desired positioning of the ball relative to the seat. It is noted that the hard spherical core is taken here to include all known hard materials including Ceramic, Steel, etc. Ray also discloses applying a coating of non-stick material (paragraph [0022], lines 5 – 12) for the purpose of obtaining a good reliable seal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in the combination of Dunn et al. and King et al. a ball comprising of a hard spherical core, for the purpose of providing desired positioning of the ball relative to the seat, as recognized by Ray. Ray also discloses applying a coating of non-stick material (paragraph [0022], lines 5 – 12) for the purpose of obtaining a good reliable seal.

Regarding claim 34, it is noted that the exhaust gas containing fluorine is reflective of intended use only the device disclosed by Dunn et al. is inherently capable of such use.

8. Claims 3, 4 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Neward and King et al. as applied to claims 1 – 2 and 5 – 10, 12, 13, 15, 16, 18, 20 and 35 above, and further in view of Ray (US 2002/0047025 A1).

The combination of Neward and King et al. discloses the claimed invention with the exception of explicitly disclosing the ball to be made of a ceramic material or coated with a non-stick material.

The disclosure of Ray teaches that it is known in the art to have ball comprising of a hard spherical core, for the purpose of providing desired positioning of the ball relative to the seat. It is noted that the hard spherical core is taken here to include all known hard materials including Ceramic, Steel, etc. Ray also discloses applying a coating of non-stick material (paragraph [0022], lines 5 – 12) for the purpose of obtaining a good reliable seal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in the combination of Neward and King et al. a ball comprising of a hard spherical core, for the purpose of providing desired positioning of the ball relative to the seat, as recognized by Ray. Ray also discloses applying a coating of non-stick material (paragraph [0022], lines 5 – 12) for the purpose of obtaining a good reliable seal.

11. Claims 14, 17, 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Dunn et al. (US 5,370,507) and King et al. (US 5,542,450) as applied to claims 1 – 2, 5 – 11, 21, 24, 25 and 35 above and further in view of Houze et al. (US 2001/0028858).

The combination of Dunn et al. and King et al. discloses the claimed invention with the exception of explicitly disclosing the body part to comprise a metal cast part.

Houze et al. disclose a vacuum pump with a body comprising cast metal part for the purpose of obtaining a desire body shape at a low cost.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in the combination of Dunn et al. and King et al. a body part comprising a cast metal for the purpose of obtaining a desire body shape at a low cost, as evident from Houze et al..

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Response to Arguments

13. Applicant's arguments with respect to claims rejected above have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

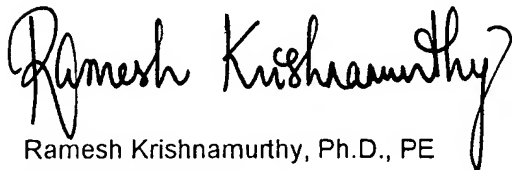
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (571) 272 – 4914. The examiner can normally be reached on Monday - Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen L. Blau, can be reached on (571) 272 – 4406. The fax phone number for the organization where this application or proceeding is assigned is (571) 273 – 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Ramesh Krishnamurthy". The signature is fluid and cursive, with the first name "Ramesh" and last name "Krishnamurthy" clearly distinguishable.

Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
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